Industrial Coatings

Coating Solutions That Work

IMRON® 2.1 HG™

HIGH GLOSS POLYURETHANE (INCLUDES MIX QUALITY VF)

Imron® 2.1 HG™ High Gloss Aliphatic Polyurethane Enamel is a high-solids, two-package, VOC conforming, 2.1 lbs./gal.,low HAPS product based on patented DuPont resin technology, producing properties of both polyester and acrylic polyurethane. The resulting highly durable finish delivers industry leading polyurethane performance.

SUGGESTED USES

As a high performance topcoat over suitable primers or tie coats on steel, galvanized steel, stainless steel, aluminum, concrete, concrete block, fiberglass, plastics and wood where:

- Outstanding gloss and color retention are desired
- Excellent resistance to chemical and/or marine environments is required.
- Outstanding abrasion resistance and flexibility are required.
- Application by brush and roller, in addition to spraying, may be necessary.
- Application must be made at temperatures as low as 35° F.

NOT RECOMMENDED FOR:

Immersion Service

COMPATIBILITY WITH OTHER COATINGS

Imron® 2.1 HG™ can be applied over other DuPont Industrial Coatings including, but not limited to, Imron® Waterborne Polyurethane Copolymer coatings, Corlar® epoxies, Tufcote® acrylics, Tufcote® alkyd primers, and DuPont WP™ wash primer. Imron® 2.1 HG™ may also be used over Ganicin® zinc rich coatings if a tie coat is used.

Imron® 2.1 HG™ may be used over most aged and hard-cured coatings in good condition. Testing for lifting, bubbling and adhesion is recommended to assure compatibility with unknown coatings. Contact your DuPont Performance Coating representative for specific recommendations.

MAXIMUM SERVICE TEMPERATURE

250°F (93°C) in continuous service.
300°F (148°C) in intermittent heat.
Some yellowing of light colors may occur at elevated temperatures.

PERFORMANCE PROPERTIES*

Abrasion & Mechanical Abuse	Excellent	Acids	Excellent
Alkalis	Excellent	Color & Gloss Retention	Excellent
Humidity	Excellent	Salts	Excellent
Solvents	Very Good	Weather	Excellent

VOC (THEORETICAL) (AVERAGE VARIES WITH COLOR)

Mixed VOC, no reduction	2.0 lbs./gal. (241 g/l)
Mixed VOC, @ maximum recommended reduction & 2 oz. MasterTint® 389S™ or 2 oz. Imron® VHY-691™ Accelerator	2.1 lbs./gal. (252 g/l)
Mixed HAPS, no reduction	0.81 lbs/gal of solids
Mixed HAPS @ maximum recommended reduction & 2 ozs; MasterTint® 389S™ or 2 oz. Imron® VHY-691™ Accelerator	0.81 lbs/gal of solids

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COLOR (CUSTOM COLORS ALSO AVAILABLE AS A MIX,"VF" QUALITY)

White 1333-67632	Shale Grey 1333-67633	Safety Yellow 1333-23663	Safety Green 1333-23666
Black 1333-67640	Cirrus Grey-1333-67637	Safety Orange 1333-23662	
Clay Tan 1333-67635	Safety Red 1333-23664	Safety Blue 1333-23665	

GLOSS (ASTM D523):

>90 measured @ 60° angle.

CURE TIME – HOURS @ 77°F (25°C), 50% R.H. @ 1.5-2.0 MILS SUGGESTED DFT

	Without Accelerator	Hours w/2 oz. MasterTint® 389S™
Dry to Touch	3 hrs	1.5 hrs
Dry to Recoat	4 hrs	2 hrs
Dry To Handle	4.5 hrs	2.5 hrs
Pack/Ship	24 hrs	8 hrs
Full Cure	7 days	4 days
Pot Life	1 hrs	2hrs

*See Additional Comments #1 & 2

THEORETICAL COVERAGE PER GALLON*

1074 FT² (26.1 m²/L) @ 1 mil
537FT² (13.1 m²/L) @ suggested DFT of 2 mils
*Material losses during mixing and application will vary and must be taken into consideration when estimating job requirements.

SUGGESTED FILM BUILD

2.5 - 3.5 mils (57 - 75 µm) wet (WFT)
1.5 – 2 mils (37 – 50 µm) dry (DFT)

VOLUME SOLIDS (MIXED):

67%± 2% Varies by Color

WEIGHT SOLIDS (MIXED):

73% ± 3% Varies by Color

WEIGHT PER GALLON (MIXED):

8.9-11.6 lbs. (4.1 – 5.2 kg) Varies by Color

FLASH POINT (TAG CLOSED CUP)

Between 20 to 73° F (-6 to 23° C)

PACKAGING

Enamel: 1's (75% full)
5's (containing 3 gallons)

Activator: Quarts and gallons

SHIPPING WEIGHT (LBS) APPROXIMATE/AVG.

Enamel:	1 gallon container – 10	5 gallon container – 35
Activator:	1 quart container – 3	1 gallon container – 12

SHELF LIFE & STORAGE CONDITIONS

- Store in a dry, well-ventilated area. Storage temperatures should be between -30° F (-34° C) and 120° F (48° C).
- Shelf life – 1 year minimum

SAFETY INSTRUCTIONS

Consult the Material Safety Data Sheet for this product prior to use.

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APPLICATION INFORMATION

SURFACE PREPARATION

Newly primed surfaces should be clean and dry. If contaminated, detergent/water wash, then blow dry. Previously painted surfaces should have all loose paint removed and the edges feathered. Prime bare spots with appropriate primer.

ACTIVATION

Thoroughly mix 3 parts Imron® 2.1 HG™ Enamel (1333-XXXXX), then add 1 part of Imron® FG-1333™ Activator mix well by stirring.
No induction period is necessary.

POT LIFE

1 hour @ 77°F and 50% RH without accelerator.
2 hours @ 77°F and 50% RH with 2 oz./mixed gallon MasterTint® 389S™ accelerator, 15% T-1022.

REDUCTION

Normally 10% -15% reduction is adequate for spray application depending upon conditions and equipment. To help maximize pot-life, up to 15% maybe added. Add 10%-15% DuPont T-1021™ or T-1022™ Thinner for brush and roll application. If bubbles develop during roller application, add 1 oz. DuPont RT002P™ per activated gallon. After addition, allow 5 minutes induction before application. Use DuPont T-1021™ Thinner for normal conditions below 80° F and DuPont T-1022™ Thinner for hot and windy conditions above 80° F. If faster recoat and handling are required, add up to 2 oz. MasterTint® 389S™ or up to 2 oz. DuPont VHY691™. To maximize pot-life use 2 ozs 389S.

APPLICATION THINNERS & ADDITIVES

Spray:	DuPont T-1021™ – Below 80°F
	DuPont T-1022™ – Above 80°F
Brush:	DuPont T-1021™ – Below 80°F
	DuPont T-1022™ – Above 80°F
Roll:	DuPont T-1021™ & RT002P™ – Below 80°F
	DuPont T-1022™ & RT002P™ – Above 80°F

CLEANUP THINNERS

DuPont T-1021™ or Acetone

APPLICATION CONDITIONS

Do not apply if the application surface temperature is below 45°F (7°C) or above 110°F (43°C), or if the atmospheric temperature is within 5°F of the dew point. For application temperatures below 45°F, the use of Imron® VHY-691™ is recommended. Relative Humidity should be below 90%.

APPLICATION EQUIPMENT

- Apply by spray, brush or roll
- Manufacturers listed below are a guide. Others may be used. Changes in pressure and tip size may be required to achieve proper application.

AIR SPRAY

Manufacturer	DeVilbiss	Sata
Spray Gun	JGA	K3 RP
Fluid Tip	FF (1.4)	1.1
Air Cap	765	-
Pot Pressure	15 psi	15 psi
Atomizing Pressure	50 psi	36 psi

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AIRLESS SPRAY

Manufacturer	Graco
Pump	Xtreme 33:1
Filter	60 Mesh
Fluid Hose	3/8" X 100' Max.
Spray Gun	238591
Tip Size	.411-.611
Pressure	2400 psi min

AIR ASSISTED AIRLESS

Manufacturer	Graco
Pump	Senator 12:1
Spray Gun	217292
Tip Size	.023 - .029
Fluid Hose	3/8" X 50' Max.

HVLP

Manufacturer	DeVilbiss
Spray Gun	GTI
Tip Size	1.4 mm
Air Pressure	10 psi @ air cap
Fluid Hose	3/8" X 60' Max.
Fluid Delivery	10 – 12 oz
Air Cap	2000

ROLL

Manufacturer:	Wooster® Pro/Doo-Z™ ¼: - ½" nap.
Additions:	Add 1 oz./gallon DuPont RT002P™ Rolling Thinner to eliminate bubbles. Craters may develop if you exceed 2 oz./gallon. Add 10-15% DuPont T-1021 or T-1022™ Thinner to maintain wet edge. May be cross-rolled. For best results, allow 5 minutes mix time after adding DuPont RT002P™ Do not use DuPont RT002P™ in spray applications.

BRUSH

Manufacturer:	Wooster® China Bristle
Additions:	Add 10-15% DuPont T-1021 or T-1022™ Thinner to maintain wet edge. Do not cross brush to reduce lap marks. Add up to 1 oz./gallon DuPont RT002P™ Rolling Thinner to eliminate bubbles. For best results, allow 5 minutes mix time after adding DuPont RT002P™ Do not use DuPont RT002P™ in spray applications.

ADDITIONAL COMMENTS

1. Dry times can be improved by adding up to 2 oz. MasterTint® 389S™ or DuPont VHY691™ Accelerator per activated gallon. The use of Mastertint® 389S is recommended to maximize pot life.
2. May be recoated by spray when tack-free.
3. Add 1 oz./gallon DuPont RT002P™ to eliminate bubbles that form during rolling. DuPont RT002P™ is not recommended for spray application. Do not exceed 2 oz./gallon DuPont RT002P™ as craters may develop.
4. If accelerators have been used, recoating must be done within 48 hours. If more time has elapsed, scuff sand to ensure adhesion.
5. Imron® 2.1 HG is also available in a mix or variable gloss qualities.

VF-High Gloss VG-Semi Gloss VH-Satin Gloss VI-Flat

When making Mix or variable gloss qualities, 780P binder and/or 781P Flat Clear Binder must be used.

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ASTM INFORMATION

Physical properties are averages. Properties listed are for a system of Corlar® 2.1 ST (formerly 25P) and Imron® 2.1HG. Total DFT 7 mils.

• Salt Fog (ASTM B-117)	500 hours	No rust, no blistering	
	1000 hours	No rust, no blistering	
	1500 hours	No rust, few #8 blisters at the scribe No undercutting.	
• Humidity Resistance(ASTM D2247)	500 hours	No rust , no blistering	
	1000 hours	No rust, few #8 blisters No rust, few #8 blisters	
• Adhesion (ASTM D4541 -02)	1753 psi	Excellent	
Adhesion (ASTM D3359-02 A/B)	5/5	Excellent	
• QUV A (ASTMD4587)	1500 hours	Gloss before:	95.2
		Gloss after:	89.9
		% Retention:	94%

SELECT CHEMICAL REISITANCE – The following are chemical resistance ratings for 24 hour watch glass testing. Rating scale used was a scale 1-10, 10 being the best.

	Rating
1% HCL (Hydrochloric Acid)	10
1% H2SO4 (Sulfuric Acid)	10
10% H2SO4 (Sulfuric Acid)	10
1% HNO3 (Nitric Acid)	10
1% H3PO4 (Phosphoric Acid)	10
10% H3PO4 (Phosphoric Acid)	10
1% NH4OH (Ammonium Hydroxide)	10
5% NH4OH (Ammonium Hydroxide)	10
10% NH4OH (Ammonium Hydroxide)	10
1% NAOH (Sodium Hydroxide)	10
5% NaOH (sodium Hydroxide)	10
VM P Naptha	10
10% NaOH (Sodium Hydroxide)	9
Ethanol	8
10% HNO3 (Nitric Acid)	7
5% DMEA (Dimethyl-Ethanol - Amine)	7
MEK (Methyl Ethyl Ketone)	7
Aromatic Hydrocarbon 100	7
Acetic Acid	3
DBE (Dibasic Esters)	3

	Rating
Mineral Spirits	10
Motor Oil - Mobil 10W-30	10
Hydraulic Oil - Pennzoil	10
Cutting Oil - Rigid	10
Unleaded Gas	10
Tide Soap	10
Fantastic	10
Household Bleach	10
Cola	10
Isopropyl Alcohol	9
29% NH4OH (Ammonium Hydroxide)	9
Ethyl Acetate	7
Toluene	7
Aromatic HC 100	7
Butyl Cellusolve	5
Coffee	5
Skydrol	3
DOT 3 Brake Fluid	3